RESPONSE TO PUBLIC COMMENTS

From August 14, 2006 to September 12, 2006, the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited Public Comments on a draft NPDES permit, developed pursuant to an application from the Town of Douglas Water and Sewer Department for the Douglas Wastewater Treatment Facility in Douglas, MA. After a review of the comments received, EPA has made the final decision to issue the permit authorizing the discharge. The following response to comments describes any changes that have been made to the permit from the draft and describes and responds to the comments received on the draft permit. A copy of the final permit may be obtained by writing or calling Meridith Decelle, United States Environmental Protection Agency, One Congress St., Suite 1100 (CMP), Boston, Massachusetts, 02114-2023; Telephone: (617) 918-1533.

A. Comment submitted by Joseph D'Alesio, P.E., Vice President, BETA Group, Inc., on behalf of the Town of Douglas Water and Sewer Commission (the "Town"), dated September 11, 2006.

Comment A.1.

Page 5, Footnote 12 of the draft permit states "Consistent with Section B.1 of Part II of the Permit, the Permittee shall properly operate and maintain the phosphorus removal facilities in order to obtain the lowest attainable discharge of phosphorus. We suggest that the part of the sentence stating "…to obtain the lowest attainable discharge of phosphorus" be deleted. With proper sludge handling, effluent phosphorus concentrations will be reduced through biological means. Chemical precipitation will be required to meet the summer phosporus limits, while a small amount of chemical may be required for effluent polishing during the winter months to insure that the winter limit of 1 mg/l is met. The amount of phosphorus removed is a function of the chemical dosage. However, the mole ratio of chemical addition to phosphorus concentration increases dramatically at higher removal rates. Higher chemical feed rates and phosphorus removal levels increase both the chemical cost and sludge removal cost. As written, the client (the Town) would be required to overdose chemical to obtain "the lowest attainable discharge of phosphorus". Prior to winter phosphorus limits being established, the last part of the sentence was applicable because it required that the sequencing batch reactors be operated in the biological phosphorus removal mode. Now that winter limits have been established, the last part of the sentence does not seem appropriate.

Response A.1.

EPA agrees that Footnote 12 on page 5 of the draft permit would arguably require the permittee to add chemicals in quantities significantly greater than necessary to achieve the water quality–based phosphorus limits in order to "achieve the lowest attainable discharge of phosphorus." The intent of this condition was to ensure that the phosphorus removal system be operated as efficiently as possible. Since proper operation is already required by Section B.1 of Part II of the permit, the footnote has been removed from the final permit.

B. Comments received from Ms. Cynthia Delpapa, Stream Ecologist, Commonwealth of Massachusetts Riverways Program, dated September 12, 2006.

Comment B.1.

The draft permit includes a very significant increase in flow for this facility. This more than three-fold increase in discharge is a great concern as it has the potential to exacerbate water quality concerns in the Mumford River. The draft permit includes permit limitations for BOD and TSS that will maintain pollutant loads at current levels for the summer months only. The flow increase will allow for a 300+% increase in flow but the permit limitations in the draft permit will not maintain the existing winter pollutant loads for this facility despite some known issues in the receiving water related to the discharge.

Response B.1.

EPA believes that the lower winter temperatures in the receiving water will ensure that the increased BOD loadings will not cause degradation of the water quality. The Douglas WWTP recently completed construction of an advanced wastewater treatment plant. Wastewater treatment now consists of preliminary treatment, biological treatment via sequencing batch reactors, tertiary treatment via filtration followed by UV disinfection of the effluent. Use of sequencing batch reactors for biological treatment of wastewater enhances BOD removal rates (85-95%). Also, during the treatment process, the addition of alum to the post-equalization tank and polymer to the filter influent piping facilitates the formation of filterable particles of TSS, thereby enhancing the removal efficiency of TSS from the effluent. EPA believes that the combination of lower winter in-stream temperatures in the receiving water and the advanced treatment of the effluent will ensure that degradation in the water quality of the Mumford River will not occur during the winter months of October 31 through April 1.

In addition, during the public comment period, Interface Fabrics Group Finishing, Inc. (formerly Guilford of Maine Finishing Services, Inc.) (NPDES permit No. MA0001538), whose East Douglas facility was permitted to discharge 1.25 MGD of treated process wastewater, boiler blowdown and cooling water to the same segment of the Mumford River containing the Douglas WWTP discharge outfall (segment MA51-14), had their

permit terminated on September 30, 2006 as they have ceased operations and no longer discharge wastewater into the river. The elimination of this discharge will result in a reduction in the overall pollutant loadings discharged into this segment of the Mumford River, providing further assurance that no degradation of the water quality will occur as a result of the increased allowable BOD and TSS loadings from the Douglas WWTP from October 31 to April 1.

Please see the next comment and response with regards to the quality of the receiving water.

Comment B.2.

The water quality assessment (305(b)) report available on the MA DEP web site notes the river, upstream of the Douglas discharge has some of the best water quality in the watershed but the water immediately below the discharge displayed markedly different quality.

> *"The benthic macroinvertebrate community downstream from the Douglas WWTP discharge was found to be severely impaired (14% comparability) as compared to the reference station upstream from the discharge." (Blackstone Water Quality Assessment, 1998)*

This information indicates there are already existing problems associated with this discharge. Given the status of the river, allowing an increase in pollutant loads to this degraded reach is not in keeping with the intent of the Clean Water Act or the anti-backsliding requirements for NPDES permits. It is not a stretch to argue this reach needs stricter permit limits because the macroivertebrate data indicates a direct causal relationship between water quality and the Douglas discharge.

Response B.2.

The 1998 Blackstone River Basin Water Quality Assessment (MassDEP) presented conclusions from a 1993 study which indicated that there was impairment of the macroinvertebrate community downstream of the Douglas WWTP and the Guilford of Maine Finishing Services, Inc. discharges compared to the upstream reference station. The 1998 Assessment Report also includes the following information:

- Since the 1993 benthic macroinvertebrate study, inspections of the Douglas WWTP and of its discharge monitoring reports indicate improvements in effluent quality.

- Subsequent to the 1993 benthic macroinvertabrate study, a new wastewater treatment plant commenced operation at the Guilford of Maine Inc., East Douglas facility which "has greatly improved their effluent quality".

As a result of the above changes, the instream biological data is no longer representative of current conditions in segment MA51-14 of the Mumford River.

In addition, two significant changes have recently taken place with regards to the nature of the two discharges into this segment of the Mumford River which are expected to enhance water quality. First, the Douglas WWTP was upgraded to an advanced WWTP which recently commenced operation. Second, Interface Fabric Group Finishing, Inc.'s NPDES permit was terminated on September 30, 2006. Pollutants from Interface's facility are no longer being discharged into the Mumford River in the allowable quantities/concentrations specified in the terminated NPDES permit, which are listed below:

	Average Monthly	Maximum Daily
Flow (MGD)		1.25
BOD (lbs/day)	205	409
CBOD (lbs/day)	1860	3720
TSS (lbs/day)	313	626
Sulfides (lbs/day)	6.2	12.4
Phenols (lbs/day)	3.1	6.2
Chromium, Total (lbs/day)	3.1	6.2
Phosphorus, Total (lbs/day)	Report	Report
pH	6.0-8.3 Standard Units	
Oil & grease		15 mg/l
WET Testing		
LC_{50}		Report
C-NOEC (%)		>10.8

As a result of the changes described above (the changes in the discharges noted in the 1998 water quality assessment as well as to the two recent changes to the permitted facilities), the 1993 benthic macroinvertebrate data cannot be extrapolated to make inferences regarding the current conditions in this segment of the river. EPA believes that conditions in the draft permit, which include proposed limits and monitoring requirements for WET testing, conventional, and non-conventional pollutants that were developed to be protective of aquatic life, will ensure that the integrity of the receiving water is maintained.

Should monitoring of the receiving water indicate any degradation of the receiving water quality, or if a TMDL indicates the need to reduce the loadings of pollutants to the receiving water, the permit may be reopened and more stringent limitations may be established through a formal permit modification process.

Comment B.3.

The fact sheet states that regulators have concluded the increase in pollutant loads will not result in a failure of the Mumford River to meet water quality standards because higher winter flows and temperatures will, "ensure that no degradation of water quality will occur". While the temperatures will likely be cooler (though no supporting data is included and the flows out of the impoundments may actually have temperatures deviating from free flowing rivers) the winter months may not provide more dilution based on the data provided in the Fact Sheet. The flow to the river reach containing the Douglas discharge is highly regulated, and the record shows there are times when winter flows have been as low as summer flows. This occurred in winter 2001-02 when December, 2001 and January and February, 2002 had flows of 17 cfs which were lower than the August 2001 flow of 18 cfs. The winter after, 2002-2003, had even more problematic water issues when New England suffered a drought from early autumn through late spring. While this flow data was not provided in the Fact Sheet it would not be a surprise if the flow record showed another low flow winter season. Given the significant flow increase, the dilution issues, the water quality status of the receiving water and the statutes regarding backsliding and degradation, we feel strongly the pollutant loads for this facility, at a minimum, be maintained at current levels throughout the year.

Response B.3.

EPA agrees that the flow in the Mumford River is highly regulated. The 7Q10 used to calculate the dilution factor for the Douglas discharge, and in turn the water quality-based effluent limits, is based upon the minimum instream flow of 16 cubic feet per second (cfs) that Interface Fabrics Group Finishing, Inc. (formerly Guilford of Maine Finishing Services, Inc.) was required to maintain from its two upstream impoundments as a condition of its NPDES permit (NPDES permit No. MA0001538). EPA acknowledges that the winter flows in the Mumford River have sometimes been as low as summer flows, but we believe that the colder winter instream temperatures, coupled with elimination of pollutant discharges from Interface Fabrics Group Finishing, Inc. (discussed in Response B.2.) will ensure that there is no degradation of the water quality of the Mumford River during the winter months. (also see the Response B.2 for a discussion of receiving water quality)

Because of the termination of its NPDES permit, Interface is no longer required to operate its two upstream impoundments to maintain a minimum flow of 16 cfs. We are concerned that without this regulation, flows may fall below this rate, especially during summer months. We have therefore added a requirement to the Douglas permit requiring the Town to routinely measure the flow in the Mumford River. The final permit requires the Town to measure the flow of the receiving water three times per week using the staff gauge currently in place downstream of the Gilboa Dam (see Footnote 3 in the final permit). The permittee may propose an alternative monitoring location to MassDEP and EPA, and may begin taking instream flow measurements at this alternative site upon receipt of written approval from EPA and MassDEP via certified mail.

Should the monitoring data reveal that the flow in the River is less than 16 cfs, the permit will be reopened and new water quality-based limits established in order to reflect a more accurate 7Q10 instream flow.

Comment B.4.

The frequency of monitoring required in the permit for BOD, TSS and many of the other pollutant's concentrations and/or loadings will be once per week. Since there is a three-fold increase in flow possible and the receiving water has water quality issues, the once per week monitoring may not be adequate to fully understand effluent characteristics. Should the facility experience any problems with meeting limitations, we would like to encourage additional testing be undertaken. Additional data will be helpful in working to prevent or correct problems with the treatment or other proceses as the influent flows increase over time. The additional information will allow plant managers and operators to address issues as they begin to manifest and will provide additional information to those concerned about water quality in the river.

Response B.4.

EPA believes that the monitoring frequencies specified in the permit are sufficient for determining compliance with the permit requirements as well as for characterizing the quality of the effluent and that additional monitoring is not warranted at this time.

Additional Changes Made to the Final Permit

- The frequency of *E. coli* monitoring has been reduced from once per week to once per month. A footnote describing the requirement that *E. coli* sampling be conducted concurrently with one of the fecal coliform samples has also been added to the final permit (see Footnote 8 in the final permit).

- In reference to the fecal coliform limitation, Footnote 7 on page 4 of the draft permit states "Bacteria samples will be collected at the same time as chlorine residual samples". This statement, and the requirement for collecting bacteria samples concurrently with chlorine residual samples, has been removed from the footnote in the final permit because the Douglas WWTP uses ultraviolet (UV) irradiation, not chlorine, for disinfection.

- Part I.A.1.g. has been added to the final permit to include the following requirement: "If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing their plans for further flow increases and how they will maintain compliance with the flow limit and all other effluent limitations and conditions.

- The following language has been added to Part I.B. of the final permit: "Notification of SSOs to Mass DEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instructions for its completion may be found on-line at: http://www.mass.gov/dep/water/approvals/surffms.htm#sso